

CLAIMS

I claim:

1. Effort-distributing swimming and diving flipper of the type which includes:

- on the one hand, a bootee (1) intended for accommodating the foot of a user and extending forward in the form of a blade (2) to constitute a mobile propulsion assembly, this bootee being shaped so as to permit, when positioned on the foot of a user, a movement of the upper part of the foot or instep (P) with respect to the leg (J), in such a manner that the instep can form, during the finning action, an angle (a) of variable size with the leg, and

- on the other hand, a leg-fastening device (5) shaped so it can be attached around the lower part of the leg and below a user's calf and connected to the mobile propulsion assembly (2-1) through effort-transmitting side arms (4) and with hinges (6), with the lower extremities (4a) of these arms and said mobile propulsion assembly (2-1) being arranged in a complementary fashion in order to constitute limit stop systems (7c, 9, 4c) ensuring during the active phase of the finning movement, a limitation of the size of this angle, characterized by the fact that the lower extremities (4a) of the effort-transmitting arms (4) are attached to the mobile propulsion assembly (1-2; 1-2-7) in places corresponding to the locations of the malleoli when the flipper is positioned on a user's foot.

2. Swimming and diving flipper as per claim 1, characterized by the fact that the limit stops (9) which allow limiting the amplitude of the active finning movements are adjustable so as to allow a limitation of the size of the finning angle (a) to a value lower than the maximum anatomical value the instep (P) is normally able to form with the leg (J) of the user for whom the flipper is intended.

3. Swimming and diving flipper according to claim 2, characterized by the fact that the system of adjustable limit stops consists of removable and interchangeable shims (9) of different sizes, so as to allow selecting the optimal angle of maximum extension of each individual's foot during the active finning movement.

4. Swimming and diving flipper according to any of claims 1 to 3, characterized by the fact that the mobile propulsion assembly (1-2) is equipped with side posts (7) placed on each side of the bootee (1) and that the lower extremities (4a) of the effort-transmitting arms (4) are attached to these side posts.

5. Swimming and diving flipper according to claim 4, characterized by the fact that the system of stops limiting the amplitude of the swivel motion of the mobile propulsion assembly (1-2-7) includes a sleeve (7a) formed by the back part of the side posts (7) and in which the lower part (4a) of the corresponding effort-transmitting arm (4) is hinged, this sleeve featuring a transversal stop wall (7c) against which the extremity (4a) of said lower part comes to bear at the end of the swivel travel of said propulsion assembly.

6. Swimming and diving flipper according to claim 5, characterized by the fact that the system of stops limiting the amplitude of the swivel motion of the mobile propulsion assembly (1-2-7) includes a removable shim (9) which is shaped so it can be placed and fastened interchangeably between the transversal stop wall (7c) and the extremity (4c) of the lower part (4a) of the effort-transmitting arm (4).

7. Swimming and diving flipper according to claim 6, characterized by the fact that the interchangeable shims (9) are made of elastomer.

8. Swimming and diving flipper according to any of claims 1 to 7, characterized by the fact that the leg-fastening device (5) consists of elements capable of surrounding the lower part of a user's leg, below the calf, this device including, for example, a back support piece (10) shaped so that it conforms to the lower back part of the leg, and a front support piece (11) shaped so that it conforms to the front part of the leg, these two parts being joined on one hand by a supple tie (12) and on the other hand, by a detachable connecting system (13A-13B) for opening and closing this collar.

9. Swimming and diving flipper according to claim 8, characterized by the fact that the effort-transmitting arms (4) are in the form of a single piece and are attached one to the other at their upper part and in the back, by a part constituting the rear support piece (10) of the leg-fastening device (5).

10. Swimming and diving flipper according to any of the claims 1 to 9, characterized by the fact that the mobile propulsion assembly formed by the bootee (1) and the blade (2) consists of a traditional swimming flipper and that the assembly including the leg-fastening device (5), the effort-transmitting arms (4) and the side posts (7) is attached to the bootee-blade assembly (1-2) by means of a sole plate (7d) connecting said side posts (7) and which is fastened under said bootee-blade assembly.

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11. Swimming and diving flipper according to any of the claims 1, 8 or 9, characterized by the fact that it is made of a single piece, the rear support piece (10) being arranged so as to form a limit stop against which the lower back part of the user's leg comes to rest, so that the leg, at the end of the active phase of finning can form with the instep only an angle of limited size, that is smaller than the size of the maximum anatomical angle.